

Amendments to the Claims:

This listing of claims replaces all prior version, and listings, of claims in the application.

Listing of Claims:

1-29. (Cancelled)

30. (Previously Amended) A system for monitoring quality of service of play out of a digital video program, the system comprising:

a program source to,

encode each frame of the digital video program with a first unique signature that identifies the frame as being associated with the digital video program;

create a meta-stream for the digital video program, the meta-stream including a play-out schedule for the digital video program and a length of the digital video program; and

prior to play-out of the digital video program, transmit the meta-stream to a play-out device; and

the play-out device to compute statistics associated with play-out of the digital video program, the play-out device including,

a signature engine to generate a second unique signature for each frame of the digital video program being played out; and

a matching engine to compare the second unique signature generated for each frame with a corresponding first unique signature encoded with the frame, compare a time of the play-out of the digital video program with a time specified in the play-out

schedule, and compare an actual duration of the play-out of the digital video program with the length of the digital video program specified in the meta-stream.

31. (Previously Presented) The system of claim 30, wherein the play-out device includes a non-volatile local storage to store the computed statistics.

32. (Previously Presented) The system of claim 31, wherein the play-out device is operable to run a quality of service application for automatically analyzing the computed statistics.

33. (Previously Presented) The system of claim 30, wherein the program source encodes each frame of the digital video program with a first unique signature using a hashing function.

34. (Previously Presented) The system of claim 33, wherein the hashing function used by the program source to encode each frame with a first unique signature is also used by the signature engine for generating the second unique signature for each frame of the digital video program being played out.

35. (Previously Presented) The system of claim 30, wherein the program source transmits the meta-stream to a play-out device using an encryption algorithm.

36. (Previously Presented) The system of claim 30, wherein the digital video program is distributed to the play-out device from the program source in accordance with MPEG-2 compression.

37. (Previously Presented) The system of claim 30, wherein the program source places the unique first signature associated with a given frame of the digital video program into video image side bands of the frame.

38. (Previously Presented) The system of claim 30, wherein the program source combines the digital video program and the meta-stream into a program stream to be distributed to the play-out device.

39. (Previously Presented) The system of claim 30, wherein the play-out device comprises one of a cable system, a set-top box, or a computer.

40. (Currently Amended) A computer program product system for monitoring quality of service of play out of a digital video program, the system tangibly embodied on first and second computer-readable mediums, ~~the computer product system comprising instructions for:~~

~~on~~ the first computer readable medium including instructions for:
encoding each frame of the digital video program with a first unique signature that identifies the frame as being associated with the digital video program;
creating a meta-stream for the digital video program, the meta-stream including a play-out schedule for the digital video program and a length of the digital video program;
prior to play-out of the digital video program, transmitting the meta-stream to a play-out device; and

responsive to the play-out device playing out the digital video program, the play-out device computing statistics associated with the play-out of the digital video program on the second computer readable medium; the second computer readable medium including instructions for;

generating a second unique signature for each frame of the digital video program being played out;

comparing the second unique signature generated for each frame with a corresponding first unique signature encoded with the frame;

comparing a time of the play-out of the digital video program with a time specified in the play-out schedule; and

comparing an actual duration of the play-out of the digital video program with the length of the digital video program specified in the meta-stream.

41. (Previously Presented) The computer program product system of claim 40, further comprising instructions for storing the computed statistics on a non-volatile local storage of the play-out device.

42. (Previously Presented) The computer program product system of claim 41, further comprising instructions for automatically analyzing the computed statistics using a quality of service measurement application.

43. (Previously Presented) The computer program product system of claim 40, wherein the instructions for encoding each frame of the digital video program with a unique first signature comprises instructions for using a hashing function to compute each first unique signature.

44. (Previously Presented) The computer program product system of claim 43, wherein the hashing function used to compute each first unique signature is also used for generating the second unique signature for each frame of the digital video program being played out.

45. (Previously Presented) The computer program product system of claim 40, wherein the instructions for transmitting the meta-stream to a play-out device comprises instructions for transmitting the meta-stream to the play-out device using an encryption algorithm.

46. (Previously Presented) The computer program product system of claim 40, wherein the digital video program is distributed to the play-out device in accordance with MPEG-2 compression.

47. (Previously Presented) The computer program product system of claim 40, wherein the instructions for encoding each frame of the digital video program with a unique first signature comprises instructions for placing the unique first signature into video image side bands associated with a given frame of the digital video program.

48. (Previously Presented) The computer program product system of claim 40, wherein the digital video program and the meta-stream are combined into a program stream to be distributed to the play-out device.

49. (Previously Presented) The computer program product system of claim 40, wherein the play-out device comprises one of a cable system, a set-top box, or a computer.